UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/523,521	WU ET AL.
	Examiner	**Art Unit**	
	Katrina Fujita	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-20* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-20* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on <u>04 February 2005</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>02/04/2005</u>.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Suggestions

1.   In claims 9 and 19, line 3, "frequency component" should be changed to --

frequency components--.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-4, 7-14, and 17-20 are rejected under 35 U.S.C. 102(e) as being

anticipated by Lofgren et al. (US 6,664,976, which incorporates Brunk et al. (US

2002/0126872) by reference, see Lofgren et al. at col. 7, line 12).

Regarding **claims 1 and 11**, Lofgren et al. discloses a system and method for generating a plurality of noise-deteriorated images (figure 7, derivative images, Lofgren et al.) from an image displayable on a computer display (figure 7, "Image 002", Lofgren et al.) for deterring unauthorised reuse of the image ("analyzes whether a user's security or permission level is sufficient enough to receive a watermarked image into or from a workstation", Lofgren et al. at col. 10, line 39), comprising:

means (Brunk et al. at figure 1, numeral 22, which is equivalent to applicant's disclosed transformation module) for transforming an image (figure 7, "Derivative 002", Lofgren et al.) displayable on a computer display into a plurality of frequency components ("transformed into a frequency domain" Brunk et al. at paragraph 0022, line 7);

means (portion of the Lofgren et al. system that creates figure 7, "Hash 2", which is equivalent to applicant's disclosed hash calculator) for generating a noise sequence for each frequency component in the plurality of frequency components, each noise sequence having a plurality of noise numbers ("hashing algorithm may be applied to the whole image or to selected portions of an image", Lofgren et al. at col. 7, line 3);

means (portion of the Lofgren et al. system used to "determine an appropriate identifier", Lofgren et al. at col. 6, line 6, which is equivalent to applicant's disclosed random sequencer) for selecting, in relation to a first noise-deteriorated image, a first noise number from each noise sequence ("randomly or pseudo-randomly selects the identifier, or alters a portion of the original image identifier", Lofgren et al. at col. 6, line 13);

means (figure 1, numeral 12a, Lofgren et al., which is equivalent to applicant's

disclosed image synthesizer) for deteriorating each frequency component in the plurality

of frequency components using the first noise number from each noise sequence

corresponding to each frequency component in the plurality of frequency components to

form a noise-deteriorated frequency component in a first plurality of noise-deteriorated

frequency components ("image and a watermark identifier are combined to produce a

digitally watermarked image", Lofgren et al. at col. 6, line 16); and

means (figure 6, numeral S24, Lofgren et al., which is equivalent to applicant's

disclosed reverse transformer) for transforming the first plurality of noise-deteriorated

frequency components into the first noise deteriorated image for displaying on the

computer display ("allows terminal 44 to receive and open the subject image", Lofgren

et al. at col. 10, line 53).

Regarding **claims 2 and 12,** Lofgren et al. discloses a method and system

further comprising: means for selecting, in relation to a second noise-deteriorated

image, a second noise number from each noise sequence; means for deteriorating each

frequency component in the plurality of frequency components using the second noise

number from each noise sequence corresponding to each frequency component in the

plurality of frequency components to form a noise-deteriorated frequency component in

a second plurality of noise-deteriorated frequency components; and means for

transforming the second plurality of noise-deteriorated frequency components into the

second noise deteriorated image for displaying on the computer display (the second

image will be the second frame of a video, as Lofgren et al. points out that "we can similarly manage audio and video as well" at col. 12, line 15).

Regarding **claims 3 and 13**, Lofgren et al. discloses a method and system further comprising means (figure 2, numeral 18, which is equivalent to applicant's disclosed display) for displaying consecutively the first and second noise-deteriorated images (allow access to the video images).

Regarding **claims 4 and 14**, Lofgren et al. discloses a method and system wherein the means for displaying consecutively the first and second noise-deteriorated images comprises means (figure 2, numeral 18, which is equivalent to applicant's disclosed display) for repeating the consecutive display of the first and second noise-deteriorated images (video display requires multiple frames of the same image to be displayed per second).

Regarding **claims 7 and 17**, Lofgren et al. discloses a method and system wherein the means for transforming the image comprises means (portion of figure 1, numeral 22, Brunk et al. that performs "a convolution operation", paragraph 0100, line 6, which is equivalent to applicant's disclosed transformation module) for performing Fast-Fourier Transformation on the image ("Fast Fourier Transform (FFT)" at paragraph 0100, line 6).

Regarding **claims 8 and 18**, Lofgren et al. discloses a method and system wherein the means for transforming the first and second pluralities of noise-deteriorated frequency components comprise means (portion of figure 1, numeral 22, Brunk et al. used to "correlate the signatures" at paragraph 0100, line 9, which is equivalent to

applicant's disclosed transformation module) for performing Inverse Fast-Fourier

Transformation on the first and second pluralities of noise-deteriorated frequency

components ("inverse FFT is taken of the 1-bit hashes" at paragraph 0100, line 10).

Regarding **claims 9 and 19**, Lofgren et al. discloses a method and system

further comprising means (portion of the Lofgren et al. system that creates figure 7,

"Hash 1", which is equivalent to applicant's disclosed hash calculator) for generating a

first noise sequence having a first plurality of noise numbers prior to the generation of

the noise sequence for each frequency component in the plurality of frequency

components (hash sequences for the derivatives are generated subsequent to the hash

generation for Image 002).

Regarding **claims 10 and 20**, Lofgren et al. discloses a method and system

wherein the means for generating the noise sequence for each frequency component in

the plurality of frequency components comprises means (portion of the Lofgren et al.

system wherein the "new derivative image 001a is preferably uniquely identified",

Lofgren et al. at col. 5, line 50, which is equivalent to applicant's disclosed truncation

and regulation modules) for truncating and modifying the amplitude of the first noise

sequence ("content item is low pass filtered to smooth rough peaks in the frequency

domain", Brunk et al. at paragraph 0063, line 8) having the first plurality of noise

numbers to generate the noise sequence for each frequency component in the plurality

of frequency components ("original watermark is altered, e.g., by changing one or more

message bits to create the new unique identifier", Lofgren et al. at col. 5, line 65).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

the combination of Lofgren et al. and common knowledge in the art as evidenced by

.Tehranchi et al. (US 7,043,019).

Lofgren et al. discloses the elements of claims 4 and 14 as described in the 102

rejections above.

Lofgren et al. does not disclose that the means for displaying consecutively the

first and second noise-deteriorated images further comprises means for displaying

consecutively the first and second noise-deteriorated images in accordance with the

display refresh rate of the computer display.

However, it is well known that video frames need to be displayed at a particular

rate to avoid the user perceiving the change in frames. Similarly, computer displays

need to have a comparable display rate such that the user "sees" a continuous display.

As such, it would have been obvious at the time the invention was made to one of

ordinary skill in the art to synchronize the rates of the video and the computer display to

ensure that the "human observer does not detect flicker but instead integrates the

sequence of frames to perceive the effect of images in smooth motion" (Tehranchi et al.

at col. 8, line 10).

6.   Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

the combination of Lofgren et al. and Werner et al. (WO 00/56058).

Lofgren et al. discloses a method and system wherein the means for generating

the noise sequence for each frequency component in the plurality of frequency

components comprises means (portion of the Lofgren et al. system that uses "MD5,

MD2, SHA and SHA1" at col. 7, line 8, which is equivalent to applicant's disclosed hash

calculator) for generating the noise sequence with a plurality of segments for each

frequency component in the plurality of frequency components (i.e. the data blocks

created by the hashing algorithm).

Lofgren et al. does not disclose that the arithmetic mean value of each of the

plurality of segments tends to zero.

Werner et al. teaches a method and system of watermarking wherein the

arithmetic mean value of each of the plurality of segments tends to zero ("watermark is

a zero-mean...white noise random signal" at page 9, line 7; figure 2).

It would have been obvious at the time the invention was made to one of ordinary

skill in the art to utilize the zero-mean watermark of Werner et al. as the noise sequence

of Lofgren et al. to "prevent a change in the global mean [average brightness] of the

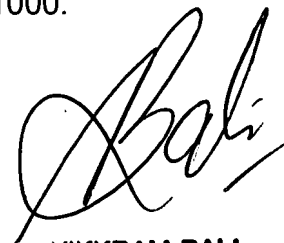signal after watermarking" (Werner et al. at page 9, line 7).

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Katrina Fujita whose telephone number is (571) 270-
1574. The examiner can normally be reached on M-Th 8-5:30pm, F 8-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for
the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
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USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Katrina Fujita
Art Unit 2624

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PRIMARY EXAMINER